

REMARKS

Claims 1, 3, and 5 and the specification have been amended to correct obvious typographical errors. No claims have been canceled or added. Accordingly, Claims 1-8 are pending.

I. Claims Rejected Under 35 U.S.C. § 102/103

The Examiner has rejected Claims 1-4 under 35 U.S.C. 102/103(a) as being anticipated or alternatively unpatentable over Suzuki et al. (U.S. Patent Reg. No. 4,978,600, hereinafter "Suzuki"). Applicant respectfully traverses this rejection.

As to the rejection under 35 U.S.C. 102, Suzuki fails to teach or suggest dissolving the pitch in an organic solvent to remove insoluble components therefrom. This is one advantage of the inventions of Claims 1-4 in that removal of insoluble components improves crystallization during graphitization and improves the cycle life of the battery. Thus, Applicant respectfully submits that Suzuki cannot anticipate Claims 1-4.

Moreover, Suzuki does not make Claims 1-4 obvious since Suzuki discloses a graphite composition characterized by a diffraction intensity ratio measuring different materials along the same plane while Claims 1-4 utilize a diffraction intensity ratio measuring the same material along two different planes (Claim 1, lines 2-4; Claim 3, lines 7-9). Thus, a numerical overlap between the diffraction intensity ratios of Suzuki and the diffraction intensity ratios of Claims 1-4 fails to destroy novelty or non-obviousness.

Specifically, Suzuki discloses an electrode comprising a graphite composition as an active material wherein the graphite composition is composed of high-crystalline graphite and low-crystalline graphite. In obtaining a diffraction intensity ratio, Suzuki uses the diffraction intensity of the diffraction angle $2\theta = 25.0^\circ$ of low-crystalline graphite (Example 1, col. 5, lines 25-30) and the diffraction intensity of the peak corresponding to the (002) reflection of the graphite material having smaller interlayer spacings (Col. 3, lines 26-33). According to Col. 1, lines 50-53, the graphite material having smaller interlayer spacings is high-crystalline graphite. Thus, the diffraction intensity ratio of Suzuki is the diffraction intensity (002) of low-crystalline graphite to

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that of (002) high-crystalline graphite, which is indicative of diffraction intensities of two distinct materials taken at the same (002) plane.

On the other hand, the diffraction intensity ratios of Claims 1-4 are that of the diffraction intensity at a (002) plane to the diffraction intensity at a (110) plane (Claim 1, lines 2-4; Claim 3, lines 7-9). Thus, the ratio is indicative of diffraction intensities taken at two planes (i.e., (002) and (110)) of the same material.

In light of the foregoing discussion, Applicant respectfully requests that the rejection under 35 U.S.C. 102/103 be withdrawn.

II. Claims Rejected Under 35 U.S.C. § 103

The Examiner has also rejected Claims 5-8 under 35 U.S.C. 103(a) as being unpatentable over Sonobe et al. (U.S. Patent Reg. No. 5,721,071, hereinafter "Sonobe"). Applicant respectfully traverses this rejection.

Applicant submits that Sonobe neither teaches nor suggests dissolving a coal tar pitch or a petroleum pitch in an organic solvent to remove insoluble components therefrom. This is an important distinction since insoluble components such as ash, carbon black, and macromolecules with high molecular weight prevent crystallization during graphitization. Moreover, insoluble components deteriorate the cycle life of the battery.

In the invention of Claim 5, the insoluble components causing the aforementioned problems are removed from the pitch before heat treatment (Claim 5, lines 3-4). Nowhere does Sonobe teach or suggest the step of removing insoluble components from the pitch. Thus, Sonobe can not obtain the same benefits as the inventions of Claims 5-8.

Thus, Applicant respectfully requests withdrawal of the rejection of Claims 5-8 as obvious under 35 U.S.C. 103(a).

CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance, and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box Non-Fee Amendment, Assistant Commissioner for Patents, Washington, D.C. 20231, on September 21, 2000.


Laura Harmon

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